

## II. REMARKS

### **Formal Matters**

Claims 1-12 and 15-19 are pending after entry of the amendments set forth herein.

Claims 6-8 and 15-17 were examined. Claims 6-8 and 15-17 were rejected.

Claims 6-8 and 15-17 are amended. The amendments to the claims were made solely in the interest of expediting prosecution, and are not to be construed as an acquiescence to any objection or rejection of any claim. Support for the amendments are found in the claims as originally filed, and throughout the specification, in particular at the following exemplary locations: page 28, lines 1-2, page 20 line 19, and page 15, lines 10-12. Accordingly, no new matter is added by these amendments. Support for new claims 18 and 19 may be found in claim 6 as originally filed.

Please replace claims 6-8 and 15-17 with the clean version provided above.

Claims 13 and 14 are canceled without prejudice to renewal, without intent to acquiesce to any rejection, and without intent to surrender any subject matter encompassed by the canceled claims. Applicants expressly reserve the right to pursue any canceled subject matter in one or more continuation and/or divisional applications.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached is captioned "**VERSION WITH MARKINGS TO SHOW CHANGES MADE.**" As no new matter has been added by the above amendments, their entry is respectfully requested.

The Applicants respectfully request reconsideration of the application in view of the remarks made herein.

### **PTO 1449 form**

The Applicants acknowledge receipt of the PTO 1449 form, initialed and dated by the Examiner, thereby indicating that the references cited in the Information Disclosure Statement filed in this application have been reviewed and made of record.

### **Rejection under 35 U.S.C § 112, first paragraph**

The Office Action states that Claims 6-8 and 15-17 are rejected under 35 U.S.C § 112, first paragraph because the specification does not enable any person skilled in the art to

which it pertains, or with which it is most nearly connected, to carry out or make the invention commensurate in scope with these claims. Specifically, the Office Action asserts that the specification does not reasonably provide enablement for applying polyacrylamide or the chemical compound with any alkyl group in a nucleic acid hybridization buffer for nucleic acid hybridization since polyacryl is alkyl group. In making the rejection, the Office states that the specification is enabling for applying urea in buffer for nucleic acid hybridization. The Applicants respectfully traverse the rejection.

According to the MPEP § 2164, "In order to make a rejection, the Examiner has the initial burden to establish a reasonable basis to question the enablement provided for the claimed invention".

The claims, as amended, are directed to methods involving a chemical with the formula:

$R(NH_2)C=O$ , where R is an amino or methyl group.

Polyacrylamide is a large polymer of acrylamide, and does not have an R group that is an amino or methyl group. As such, polyacrylamide is not described by the above formula, and, accordingly, is not used in the claimed methods. Since polyacrylamide is not used in the claimed methods, the Applicants respectfully submit that the Office Action has not established a reasonable bases to question the enablement of the claims, as they are now presented.

The Applicants submit that the rejection of claims 6-8 and 15-17 under 35 U.S.C. § 112, first paragraph has been adequately addressed in view of the remarks set forth above. The Examiner is thus respectfully requested to withdraw the rejection.

**Rejection under 35 U.S.C § 112, second paragraph**

The Office Action states that claims 7 and 16 are rejected under 35 U.S.C § 112, second paragraph as being indefinite for failing to particularly point out and distinctly claims the subject matter which applicant regards as the invention. Specifically, the Office Action asserts that the claims are vague and indefinite because the phrase "said probe and target are heated to at least their standard hybridization temperature" conflicts with the language in the preamble. The Applicants respectfully traverse the rejection.

The Applicants have amended the claims to state that "said probe and target are heated to a temperature that is lower than their standard hybridization temperature".

The Applicants submit that the rejection of claims 7 and 16 under 35 U.S.C. 112, second paragraph has been adequately addressed in view of the remarks set forth above. The Examiner is thus respectfully requested to withdraw the rejection.

### **Rejection under 35 U.S.C § 102**

The Office Action stated that claims 6-8 and 15-17 are rejected under 35 U.S.C § 102 as being anticipated by Kourilsky, assertedly because Kourilsky discloses that DNA-RNA hybridization takes place at relatively low temperature in the presence of urea. The Applicants respectfully traverse the rejection.

Claims 6 and 15, as amended, are directed to hybridization methods that involve an oligonucleotide probe attached to the surface of a glass substrate.

Kourilsky's hybridization methods involve pulse-labeled phage lambda mRNA and phage lambda DNA (approximately 50 kb) that is immobilized on a Sartorius filter. Kourilsky fails to disclose a method involving an oligonucleotide probe attached to the surface of a glass substrate. As such, Kourilsky fails to disclose at least one element of the claimed invention, and cannot anticipate the subject matter of claims 6 and 15.

Since Kourilsky cannot anticipate the subject matter of claims 6 and 15, the Examiner is respectfully requested to withdraw the rejection of claims 6-8 and 15-17 under 35 U.S.C § 102.


### **III. CONCLUSION**

The Applicants submit that all of the claims are in condition for allowance, which action is requested. If the Examiner finds that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone Timothy Joyce at (650) 485 4310.


The Commissioner is hereby authorized to charge any fees under 37 C.F.R. §§1.16 and 1.17 that may be required by this paper, or to credit any overpayment, to Deposit Account No. 50-1078.

Respectfully submitted,  
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VERSION WITH MARKINGS TO SHOW CHANGES MADE

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IN THE CLAIMS

Claims 13 and 14 are cancelled without prejudice.

Claims 18 and 19 are new.

Claims 6-8 and 15-17 are amended as follows.

6. (Amended) A method that allows a probe and target to hybridize at a temperature lower than their standard hybridization temperature, comprising:
- (a) heating the probe and target in the presence of adding to the probe and target a chemical component of the formula:  
$$R(NH_2)C=O$$

where R is an amino or ~~an alkyl~~ a methyl group;
  - ~~(b) heating the probe and target in the presence of the added component;~~ and
  - ~~(b) (e)~~ allowing the probe and target to hybridize  
wherein said probe is an oligonucleotide probe attached to the surface of a glass substrate.
7. (Amended) A method as recited in claim 6, wherein said probe and target are heated to ~~at~~ least a temperature that is lower than their standard hybridization temperature.
8. (Amended) A method as recited in claim 6, further comprising adding said chemical compound to a solution prior to heating step (a) ~~wherein said chemical component is added to a solution.~~
15. (Amended) A method that allows a probe on a micro array surface to hybridize to a target at a temperature lower than their standard hybridization temperature, comprising:
- (a) heating the probe and target in the presence of adding to the probe and target a chemical component of the formula:  
$$R(NH_2)C=O$$

where R is an amino or ~~an alkyl~~ a methyl group;
  - ~~(b) heating the probe and target in the presence of the added component;~~ and

(b) (e) allowing the probe and target to hybridize  
wherein said probe is an oligonucleotide probe attached to the surface of a glass  
substrate.

16. (Amended) A method as recited in claim 15, wherein said probe and target are heated to  
at least a temperature that is lower than their standard hybridization temperature.
17. (Amended) A method as recited in claim 15, further comprising adding said chemical  
compound to a solution prior to heating step (a) ~~wherein said chemical component is~~  
~~added to a solution.~~